U. S. ELECTION ASSISTANCE COMMISSION
VOTING SYSTEM TESTING AND CERTIFICATION PROGRAM
1225 New York Avenue, NW, Suite 1100
Washington, DC. 20005

2/3/09

Gail Audette, Quality Manager
iBeta Quality Assurance
3131 S Vaughn Way, Suite 650
Aurora, CO 80014

Re: Reuse of prior testing conducted by SysTest Laboratories

Dear Ms. Audette,

This letter is in response to iBeta Quality Assurance's recommendations (attached) to the Election Assistance Commission (EAC) regarding the reuse of the source code review conducted by SysTest Laboratories as part of the testing campaign for the Premier Assure 1.2 voting system. EAC instructed (attached) iBeta, to conduct a 3 percent audit of the source code for the Premier Assure 1.2 voting system in order to make a recommendation regarding the possible reuse of testing conducted by SysTest prior to SysTest's suspension. This review and audit was conducted in an effort to preserve any prior testing that could be relied upon as meeting the EAC's rigorous program requirements.

Based on iBeta's recommendations the EAC approves the following reuse of source code review:

Source Code Review Audit

iBeta submitted a letter (attached) to the EAC on January 23, 2009 regarding the 3% audit conducted on the Premier Assure 1.2 source code and its recommendation to reuse the prior source code review conducted by SysTest. In addition to the 3% audit of the source code iBeta conducted additional review of the prior testing. This additional review included:

1. Confirmed that the results of the iBeta review of the 3% of code are consistent with the previous results (not identical but consistent): This confirmation was reached by reviewing the types of discrepancies generated by SysTest in the 100% review against those generated by iBeta.

2. Reviewed the severity of the discrepancies discovered: The number of discrepancies potentially impacting the source code is considered very low versus the overall number of discrepancies (as is consistent with a 100% review). The severity of the discrepancies and

the vendor responses do indicate that the majority (if not all) of those 96 potential logic discrepancies would be resolved without source code modifications.

In addition to the audit and reviews conducted by iBeta the EAC Technical Reviewers have conducted a review of the recommendation made by iBeta and the audit and reviews conducted.

In its letter iBeta states, "Based on the limited impact (or perhaps no impact) on the source code as a result of these discrepancies, iBeta recommends reuse of the results of the SysTest source code review." Based on iBeta's audit and reviews and the additional technical review conducted by the EAC, iBeta's recommendation for the reuse of the source code review previously conducted by SysTest is approved.

If you should have any questions regarding this approval of the reuse of testing or the impact it has on the Premier Assure 1.2 testing campaign please feel free to contact me at anytime. Thank you.

Sincerely,

Brian Hancock
Director, Testing and Certification
US Election Assistance Commission

cc: Premier Election Solutions

attachments: iBeta letter to EAC, January 23, 2009
                EAC letter to Premier, November 11, 2008

January 23, 2009

Mr. Brian Hancock   **Sent via E-mail**
U.S. Election Assistance Commission
Voting System Testing and Certification Program
1225 New York Avenue, NW, Suite 110
Washington, DC 20005

Mr. Hancock,

The purpose of this letter is to document the 3% review of the Premier Assure source code in accordance with your 20 November 2008 letter providing instruction on the reuse of testing for the Premier certification effort. This letter also provides the iBeta recommendation to the EAC regarding the reuse of the source code review conducted by SysTest.

Documentation of the Review Process

To conduct the review, iBeta used our PCA Source Code Review Procedure. The source code was delivered on DVDs from SysTest Labs and configuration managed in the iBeta Source Code Repository. With the exception of ABasic, the coding languages submitted for review had been previously reviewed on other certification test efforts therefore the previously used interpretation of the generic VSS requirements to the language specific review criteria were utilized unmodified.   For the ABasic review, iBeta provided the interpretation of each requirement to Premier prior to initiating the source code review task. The language specific review criteria for each of the five languages is not attached to this letter and will be provided if deemed necessary for the EAC review. The VSS requirements applicable to the source code review task are:

VSS	
Vol. #	**Section(s) #**
1	4.2.2
1	4.2.3
1	4.2.4
1	4.2.5
1	4.2.6
1	4.2.7
1	6.2
1	6.4.2
2	2.5.4d
2	5.4.2

To select the 3% for review, iBeta conducted an analysis by first using a library of static analysis tools to parse each application source code base and provide a list of the files and functions as well as the Lines of Code (LOC) count. iBeta uses executable LOCs only and does not include comment, blank, or continued lines in our metrics. Once the spreadsheets were populated for each application, a selection of files/functions was made based on the file header information documenting the file purpose. iBeta focused the review by selecting source code files and functions that process vote data, audit logs, and reporting. The actual result of this analysis resulted in 5.7% of the source code being reviewed as entire files were selected for review which increased the amount of code being reviewed.

The peer review of each Source Code Review was conducted by experienced reviewers who had reviewed source code to the VSS requirements on a minimum of two VSTL test efforts. Based on the instruction in your 20 November 2008 letter "*This review will focus on important functional sections of the code in order to determine the depth and focus of source review conducted by SysTest*", the peer review analyzed each instance of non-compliance with the VSS requirements and assessed if the issue impacted source code logic. Discrepancies that dealt with comments, headers, formatting, and style were accepted as non-logic issues and color coded as green. Potential logic issues were flagged as needing an EAC decision and color coded as yellow. Confirmed logic issues were to be flagged as red (no confirmed logic issues were identified).

The matrix of the source code reviewed is provided as Attachment 1 and each individual discrepancy spreadsheet is provided as a separate confidential compressed file delivered on CD subsequent to the email delivery of this letter.

Summary of the 3% Source Code Review Results

A total of 439 discrepancies were identified with the majority, 309 or 70%, categorized as non-logic issues. In addition, 34 or 8% are a macro naming issue that are, in effect, considered a style issue bringing the total of non-logic issues to 343 or 78%. With the review conducted on 5.7% of the source code instead of the proscribed 3%, the 96 discrepancies issued represent a larger set of data upon which to base the iBeta recommendation and these results indicate that there is limited (or no impact) on the source code as a result of the 96 discrepancies.

Each individual discrepancy along with the vendor response is provided in the Enclosure and a summary of the vendor responses to those discrepancy categories is provided as Attachment 2 to this letter where Premier has provided their disagreement of the iBeta interpretation of the VSS requirements. Precedence for the iBeta interpretation has been established with testing for other clients and these established interpretations must be applied consistently to all manufacturers under test with iBeta. We do acknowledge that in some instances another interpretation may be possible and that an alternative interpretation may be acceptable to the EAC reviewers.

Recommendation Regarding the Reuse of the SysTest Source Code Review

In order to provide a recommendation, iBeta evaluated the results of the 3% source code review whereas the results would be recommended as accepted if no significant discrepancies were found, this includes the less critical requirements which were not addressed, not recorded or interpretations inconsistent with documenting industry accepted practices. As there were discrepancies written that potentially impact the source code, two other analyses were conducted:

> 1. Confirmed that the results of the iBeta review of the 3% of code are consistent with the previous results (not identical but consistent): This confirmation was reached by reviewing the types of discrepancies generated by SysTest in the 100% review against those generated by iBeta.

> 2. Reviewed the severity of the discrepancies discovered: The number of discrepancies potentially impacting the source code is considered very low versus the overall number of discrepancies (as is consistent with a 100% review). The severity of the discrepancies and the vendor responses do indicate that the majority (if not all) of those 96 potential logic discrepancies would be resolved without source code modifications.

Based on the limited impact (or perhaps no impact) on the source code as a result of these discrepancies, iBeta recommends reuse of the results of the SysTest source code review.

Sincerely,

Gail Audette

Gail Audette
iBeta Quality Manager

CONFIDENTIAL - Attachment 1: Matrix of Source Code Reviewed
CONFIDENTIAL - Attachment 2: Premier Summary of Discrepancy Responses
Enclosure: CONFIDENTIAL CD Source Code Review Discrepancies 1-23-09.zip

cc: Tab Iredale, Premier Election Solutions
        Kathy Rogers, Premier Election Solutions

U. S. ELECTION ASSISTANCE COMMISSION
VOTING SYSTEM TESTING AND CERTIFICATION PROGRAM
1225 New York Avenue, NW, Suite 1100
Washington, DC. 20005

November 20, 2008

Mr. Talbot Iredale
Premier Election Solutions   **Sent via E-mail**
Premier Election Solutions, Inc.
1253 Allen Station Parkway, P.O. Box 1019
Allen, TX 75013

Mr. Iredale:

This letter is being sent to address Premier's questions regarding the reuse of testing by iBeta
Quality Assurance (iBeta) that was conducted by SysTest Laboratories (SysTest) on the Premier
Assure System prior to the suspension of SysTest's accreditation as an EAC Voting System Test
Laboratory (VSTL). As you are aware, and as indicated in our letter to all EAC registered
manufacturers (attached), section 2.10.6. of the EAC's *Voting System Test Laboratory Program
Manual* allows for the reuse of prior testing at the EAC's discretion.

The EAC recognizes the unique circumstances the SysTest suspension has created and the need
for the EAC to be diligent in reviewing and deciding on the reuse of this testing. Given these
circumstances the EAC met with both iBeta and Premier in Denver, CO on November 13, 2008 to
discuss the testing that was conducted by SysTest and its possible reuse. As a result of this
discussion and in consultation with both iBeta and the EAC's Technical Reviewers the EAC has
reached the following decision regarding the reuse of prior testing by SysTest on the Premier
Assure 1.2 voting system:

- All hardware testing conducted by SysTest sub-contractors APT Labs Inc., Compliance
  Integrity Services, and Percept Technology Labs is accepted and may be reused. This
  decision was reached after a careful review by the EAC of the audit conducted by
  SysTest of these laboratories and a review of the testing conducted.
- iBeta will conduct an audit of the Technical Data Package (TDP) submitted to and
  reviewed by SysTest and make a recommendation to the EAC regarding the need to
  conduct a full review of the TDP. The EAC will then make a determination on the reuse
  of the TDP review conducted by SysTest.
- iBeta will conduct a 3% review of the Premier Assure source code. This review will
  focus on important functional sections of the code in order to determine the depth and
  focus of source review conducted by SysTest. iBeta will then make a recommendation to

the EAC regarding the reuse of the source code review conducted by SysTest. The EAC will then issue a decision regarding the reuse of the source code review conducted by SysTest.

- All other testing conducted by SysTest will not be allowed to be reused by iBeta as it tests the Premier Assure 1.2 system with the exception of the Accuracy Test results after a review by iBeta. iBeta will then make a recommendation to the EAC regarding the reuse of those test results and the EAC will make a decision based on that recommendation.

- Premier Assure 1.2 Test Plan rev. 11 submitted by SysTest on October 20, 2008 will be reviewed and approved by the EAC. The test plan and corresponding test cases will be used by iBeta as it works to develop its own test cases for the testing of the Premier Assure 1.2 system. The EAC will provide direction on the Volume and Stress test discussions conducted with the manufacturers and SysTest for test case development.

If you should have any questions regarding these decisions or the testing to be conducted at iBeta please do not hesitate to contact me. Thank you for your time in resolving these issues.

Sincerely,

Brian J. Hancock
Director, Testing and Certification

Attachment: 10.29.08 EAC ltr. to all EAC registered manufactures

cc: iBeta Quality Assurance
                         Kathy Rogers, Premier Election Solutions

U. S. ELECTION ASSISTANCE COMMISSION
VOTING SYSTEM TESTING AND CERTIFICATION PROGRAM
1225 New York Avenue, NW, Suite 1100
Washington, DC. 20005

October 29, 2008

To: Registered Voting System Manufacturers

From: Brian Hancock, Director
        United States Election Assistance Commission
        Testing and Certification Program

RE: EAC Issuance of Notice of Intent to Suspend SysTest, Laboratories Inc.

The U.S. Election Assistance Commission today notified (attached) SyStest Laboratories Inc. of its intent to suspend the laboratory based upon the suspension of its accreditation by NIST/NVLAP.

As a result of the notice, SysTest has three days to respond to EAC's action. If SysTest cannot refute the fact that NVLAP has suspended the laboratory the EAC will suspend SysTest and all testing under the EAC's program must be halted immediately.

Those manufacturers currently using SysTest as their lead VSTL for testing under the EAC's program should be aware of their options as provided for in the EAC's *Voting System Testing and Certification Program Manual* and the *Voting System Test Laboratory Program Manual*. Per section 4.3.1.2. of the EAC's *Testing and Certification Program Manual,* the EAC Program Director may, at his discretion, allow a manufacturer to change VSTL's provided the manufacturer shows good cause for the change. A manufacturer may request to change its VSTL by providing in writing:

1. A statement indicating the current VSTL conducting testing of their voting system.
2. The reasoning for the request to change VSTL (good cause).
3. A statement indicating the new VSTL the manufacturer wishes to test the voting system.
4. A proposed amended Voting System Certification Application reflecting the proposed VSTL change.

Upon receipt of this information, the EAC Program Director will issue written notice to the manufacturer regarding the proposed change of VSTL. Upon receipt of expressed written permission from the Program Director to change VSTLs the manufacturer may

begin testing at the new VSTL in conformance with the EAC's program requirements. Manufacturers may also choose to halt testing until such time as SysTest Laboratories may become eligible to recommence testing of their voting system. Please be aware that SysTest MAY NOT recommence testing until such time as the EAC provides written notice to SysTest of their ability to begin testing again under the EAC's program.

Many of you may have questions regarding the testing already conducted by SysTest and its use by a new VSTL. Per section 2.10.6. of the EAC's *Voting System Test Laboratory Program Manual* a VSTL may accept prior testing conducted by another VSTL or third party laboratory provided certain conditions are met. These conditions are:

1. The discrete hardware or software component previously tested is demonstrably identical to that presently offered for testing.
2. The voting system standards and relevant EAC interpretations applicable to the prior and current testing are identical.
3. The test methods used are equivalent or identical to current test methods approved by the EAC.
4. The prior testing has been reviewed by the VSTL and no errors or omissions are apparent.
5. The adoption and use of prior testing is noted in the test plan and test report.

Please be aware that the lead VSTL is responsible for ensuring that the prior testing has met these requirements. Like all testing under the EAC's program, all prior testing remains subject to EAC technical review and approval.

If you have any questions regarding the possible suspension of SysTest Labs, the process for the changing of a lead VSTL, or the process for approval of prior testing please do not hesitate to contact myself or my staff.

Sincerely,

Brian J. Hancock
Director, Testing and Certification